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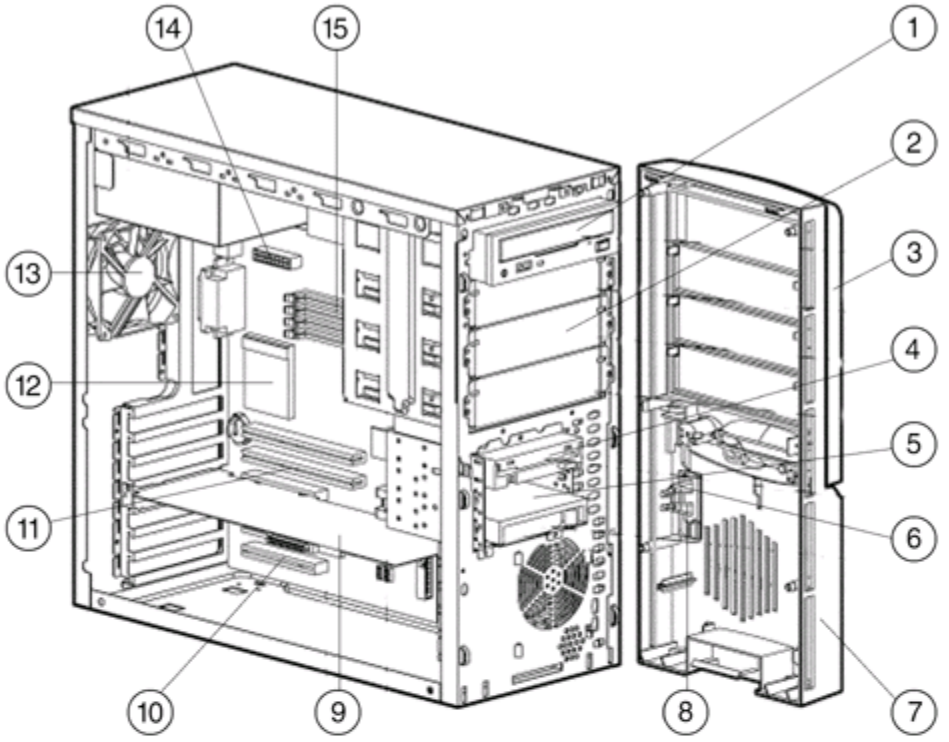
Overview Standard Features Models Options Memory Storage TechSpecs

QuickSpecs

Compaq *ProLiant* ML330 and ML330e



1. 32x or 40x CD-ROM Drive
2. Removable Media Bays (3 total, half height)
3. Drive Bay Door
4. 1.44MB Floppy Drive
5. Two 1" Non-Hot Plug Drive Bays
6. Power Indicator
7. Bezel (front cover)
8. Hard Drive Indicator
9. Server Feature Board
10. 32-bit PCI Slots
11. 64-bit PCI Slots
12. Processor
13. Fan
14. Power Supply Connector
15. DIMM Memory Slots (4 total)

What's New

- Intel® Pentium® III 1.0 GHz FC-PGA (Flip Chip-Pin Grid Array) processor (ML330e only)

At A Glance

- ServerWorks (RCC) 3.0 SLC Chipset with 133-MHz FSB
- Intel Pentium III 1.0 GHz FC-PGA Processors with 256-KB second level ECC cache standard (full speed)
- 64-MB PC133-MHz Registered ECC SDRAM DIMM memory standard, expandable to 2 GB (ML330e 1.0 GHz Models)
- 128-MB PC133-MHz Registered ECC SDRAM DIMM memory standard, expandable to 2 GB (ML330 1.0 GHz Models)
- Six total slots (5 available): two 64-bit PCI, four 32-bit PCI (no ISA)
- Two USB ports (ML330e only)
- Compaq NC3163 Fast Ethernet NIC (embedded) PCI 10/100 WOL (Wake On LAN)
- Integrated Dual Channel Ultra ATA/100 Adapter (ML330e Models) or Integrated Single Channel Wide Ultra2 SCSI Adapter (ML330 Models)
- Support for up to five 1 Wide Ultra2/Ultra3 NHP SCSI hard drives or four 1 ATA NHP Drives (depending on Model)
- Internal storage capacity of up to 182 GB (5 x 36.4-GB 1 SCSI drives) (ML330 Models)
- Internal storage capacity of up to 160 GB (4 x 40-GB 1 ATA/100 drives) (ML330e Models)
- Compaq *Insight Manager*™, *SmartStart*™ and Automatic Server Recovery (ASR)
- Rom-Based Setup Utility (R-BSU) and PXE support (ML330e only)
- Protected by Compaq Services, including a three-year, limited warranty, Next Business Day 1 year on-site limited Global warranty and Pre-Failure Warranty, which covers processors, memory, and hard drives — Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center at 1-800-345-1518 for details.

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Standard Features

Processor (ML330e)	Intel Pentium III processor 1.0 GHz		
Processor (ML330)	Intel Pentium III processor 1.0 GHz		
Cache Memory	Integrated 256-KB Level 2 ECC cache (full speed)		
Memory *One of the following*	Standard	64 MB (PC133-MHz ECC Registered SDRAM DIMM memory) (ML330e Models)	
	Standard	128 MB (PC133-MHz ECC Registered SDRAM DIMM memory) (ML330 Models)	
	Maximum	2 GB	
Network Controller	Compaq NC3163 Fast Ethernet NIC (embedded) PCI 10/100 WOL (Wake On LAN)		
Expansion Slots	I/O (6 Total, 5 available)		PCI Voltage:
	64-bit/33 MHz PCI	2 (2 available)	3.3 Volt or universal cards
	32-bit/33 MHz PCI	4 (3 available)	5 Volt or universal cards

Storage Controller	Integrated Single Channel Wide Ultra2 SCSI Adapter (ML330 Models) OR Integrated Dual Channel Ultra ATA 100 Controller (ML330e Models)	
Storage	Diskette Drives	1.44 MB
	CD-ROM	32x or 40x IDE CD-ROM Drive
	Hard Drives	One of the following: None (1) 9.1 GB Wide Ultra2 SCSI 7200 rpm 1 Drive (ML330 Models only) (1) 20 GB ATA/100 7200 rpm 1 Drive (ML330e Models only)
	Maximum Internal Storage (ML330 Models)	182 GB (5 x 36.4 GB) (internal drive bays and removable media bays) 218.4 GB (internal drive bays in addition to CD-ROM media bays)
	Maximum Internal Storage (ML330e Models)	160 GB (4 x 40.0 GB) (internal drive bays and removable media bays)
Interfaces	Parallel	1
	Serial	2
	Pointing Device (Mouse)	1
	Graphics (VGA)	1
	Hot Plug Keyboard	1
	USB	2 (ML330e Models ONLY) Note: Please see the following URL for additional information regarding USB support: http://www.compaq.com/products/servers/platforms/usb-support.html.
	Network RJ-45 (Ethernet)	1
	Note: For more information regarding the USB ports, please see the following URL: http://www.compaq.com/products/servers/platforms/usb-support.html	
Graphics	Integrated ATI RAGE XL Video Controller with 4MB SDRAM Video Memory	
Form Factor	Tower (4U) (non rack-mountable)	
Compaq Software	Compaq Insight Manager	The comprehensive system management tool that monitors the operation of Compaq servers, and clients
	Compaq Insight Manager 7	Compaq Insight Manager 7 helps maximize system uptime and performance and reduces the cost of maintaining the IT infrastructure by providing proactive notification of problems before those problems result in costly downtime and reduced productivity. Compaq Insight Manager 7 is easy to set up and provides rapid access to detailed fault and performance information gathered by the Compaq Management Agents. One-

	click access to the Remote Insight Lights Out Edition board allows systems administrators to take full graphical control of ProLiant servers in remote locations or lights-out data centers. This dramatically reduces the need to dispatch valuable IT resources to fix routing problems.
Compaq SmartStart	The server configuration and software integration tool from Compaq ML330 SmartStart version supported (minimum): SmartStart 4.70 ML330e SmartStart version supported (minimum): SmartStart 5.0
Array Configuration Utility (ACU) with Smart Array Controllers	Same easy to use yet powerful graphical user interface (GUI) configuration utility and easy to navigate wizards for all Smart Array Controllers
Array Configuration Utility (ACU-XE) with Smart Array Controllers	Compaq Configuration Utility XE (ACU-XE) web-based software for Smart Array products and the *StorageWorks*™ RAID Array 4x00 systems by Compaq allows for ease of configuration and expandability for your disk arrays, remote configuration capabilities, and multi-platform support.
Compaq Management Agents	The Compaq Management Agents (http://www.compaq.com/products/servers/management/agents.html) form the foundation for Compaq's Intelligent Manageability strategy. They provide direct, browser-based access to in-depth instrumentation built into Compaq servers, workstations, desktops, and portables, and send alerts to Compaq Insight Manager XE and other management consoles in case of subsystem or environmental failures. For additional information about the Compaq Management Agents and other management product from Compaq, please visit the management website at http://www.compaq.com/manage Note: These Web sites are available in English only.

Industry Standard Compliance

ACPI 2.0 Compliant

PCI 2.2 Compliant

PXE Support *(ML330e only)*

WOL Support

Microsoft Logo certifications

Manageability

Compaq Insight Manager
Compaq Insight Manager 7
Automatic Server Recovery (ASR)
Drive Parameter Tracking (with Smart Array Controller)
Dynamic Sector Repairing (with Smart Array Controller)
Pre-Failure Warranty (covers processors, memory and hard drives)

Security

Power-on password
Setup password
Diskette boot control
Power switch security
Intruder Alert Message (ML330 Models only)

Power Supply

250 Watts, PFC (Power Factor Correcting)
Note: PFC provided only in countries where CE Compliance is required.

Required Cabling

For required cabling information, refer to the Compaq website at http://www.compaq.com/products/servers/proliantML330/.
Note: This web site available in English only.

OS Support – ML330

Microsoft Windows NT Server
Microsoft 2000 Small Business Server
Microsoft Windows 2000
Novell NetWare
Novell NetWare Small Business Suite
SCO OpenServer 5.0.5
SCO UnixWare (certified for SCO UnixWare 7 Compaq NonStop Cluster software)
LINUX (Red Hat , SuSE , TurboLinux Server, Caldera eServer)

Note: For a more complete and up-to-date listing of supported OS's and versions, please visit our OS Support Matrix at: ftp://ftp.compaq.com/pub/products/servers/os-support-matrix-310.pdf.
Note: For an up-to-date listing of the latest drivers available for the Compaq ProLiant ML330, please see: http://www.compaq.com/support/files/server/us/index.html
Note: These Web sites are available in English only.

OS Support – ML330e

Microsoft Windows NT Server
Microsoft 2000 Small Business Server
Microsoft Windows 2000
Novell NetWare Small Business Suite 5.1
LINUX (Red Hat, SuSE)

Note: For a more complete and up-to-date listing of supported OS's and versions, please visit our OS Support Matrix at: ftp://ftp.compaq.com/pub/products/servers/os-support-matrix-310.pdf.
Note: For an up-to-date listing of the latest drivers available for the Compaq ProLiant ML330e, please see: http://www.compaq.com/support/files/server/us/index.html
Note: These Web sites are available in English only.

Service and Support – ML330

Compaq Services provides a wide range of service offerings, including a three-year limited warranty fully supported by a worldwide network of resellers and service providers, lifetime toll-free 7 x 24 hardware technical phone support, and Pre-Failure Warranty coverage of hard drives, memory, and processors. Disaster recovery services are available through partnership with Comdisco.
Note: Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.

Service and Support – ML330e

Compaq Services provides a wide range of service offerings, including a three-year limited warranty fully supported by a worldwide network of resellers and service providers, lifetime toll-free 7 x 24 hardware technical phone support, and Pre-Failure Warranty coverage of hard drives, memory, and processors. Disaster recovery services are available through partnership with Comdisco. Note: Limited Warranty includes 3 year Parts, 1 year Labor, 1-year on-site support.

Note: Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center at 1-800-345-1518 for details.

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Models

ML330eT01 P1000-256KB 64 MB 20 GB ATA	**Processor**	(1) Intel Pentium III 1.0 GHz (standard)
	Cache Memory	Integrated 256-KB Level 2 cache (full speed)
251761-xx2	**Memory**	64 MB (Standard) to 2 GB (Maximum) PC133-MHz ECC Registered SDRAM DIMM
	Network Controller	Compaq NC3163 Fast Ethernet NIC (embedded) PCI 10/100 WOL
	Storage Controller	Integrated Dual Channel Ultra ATA 100 Controller
	Hard Drive	20 GB Ultra ATA/100
	Internal Storage	160 GB maximum (with optional hard drives)
	Optical Drive	32x or 40x IDE CD-ROM Drive
	Form Factor	Tower (4U) (non rack-mountable)
ML330eT01 P1000-256KB 64 MB	**Processor**	(1) Intel Pentium III 1.0 GHz (standard)
	Cache Memory	Integrated 256-KB Level 2 cache (full speed)
251761-xx1	**Memory**	64 MB (Standard) to 2 GB (Maximum) PC133-MHz ECC Registered SDRAM DIMM
	Network Controller	Compaq NC3163 Fast Ethernet NIC (embedded) PCI 10/100 WOL
	Storage Controller	Integrated Dual Channel Ultra ATA 100 Controller
	Hard Drive	None
	Internal Storage	160 GB maximum (with optional hard drives)
	Optical Drive	32x or 40x IDE CD-ROM Drive
	Form Factor	Tower (4U) (non rack-mountable)
ML330T01 P1000-256KB 128 MB 9.1 GB	**Processor**	(1) Intel Pentium III 1.0 GHz (standard)
	Cache Memory	Integrated 256-KB Level 2 cache (full speed)
161411-xx2	**Memory**	128 MB (Standard) to 2 GB (Maximum) PC133-MHz ECC Registered SDRAM DIMM
Note: Model not available in North America	**Network Controller**	Compaq NC3163 Fast Ethernet NIC (embedded) PCI 10/100 WOL
	Storage Controller	Integrated Single Channel Wide Ultra2 SCSI Adapter
	Hard Drive	9.1 GB Wide Ultra2
	Internal Storage	218.4 GB maximum (with optional hard drives)
	Optical Drive	32x or 40x IDE CD-ROM Drive
	Form Factor	Tower (4U) (non rack-mountable)
ML330T01 P1000-256KB 128 MB	**Processor**	(1) Intel Pentium III 1.0 GHz (standard)
	Cache Memory	Integrated 256-KB Level 2 cache (full speed)
161411-xx1	**Memory**	128 MB (Standard) to 2 GB (Maximum) PC133-MHz ECC Registered SDRAM DIMM

	Network Controller	Compaq NC3163 Fast Ethernet NIC (embedded) PCI 10/100 WOL
	Storage Controller	Integrated Single Channel Wide Ultra2 SCSI Adapter
	Hard Drive	None
	Internal Storage	218.4 GB maximum (with optional hard drives)
	Optical Drive	32x or 40x IDE CD-ROM Drive
	Form Factor	Tower (4U) (non rack-mountable)

Country Code Key	XX=00	NA
	XX=01	Australia
	XX=03	UK
	XX=04	Germany
	XX=34	Austria
	XX=05	France
	XX=29	Japan
	XX=37	AP
	XX=42	Euro
	XX=AA	PRC

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Options

Memory (DIMMs)	512-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit	128279-B21
	256-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit	128278-B21
	128-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit	128277-B21
	64-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit	128276-B21
Optical Drives	12X DVD-ROM Drive Option Kit (carbon)	217053-B21
Hard Drives	***Wide Ultra3 SCSI – Non-Hot Plug*** (ML330 Models only)	
	36.4-GB Wide Ultra3 SCSI 10,000 rpm Drive (1)	176497-B21
	18.2-GB Wide Ultra3 SCSI 10,000 rpm Drive (1)	142674-B21
	ATA 100 – Non-Hot Plug (ML330e Models only)	
	40-GB ATA/100 7,200 rpm Drive (1)	230534-B21
	20-GB ATA/100 7,200 rpm Drive (1)	231377-B21
Storage Controllers	Note: The following Storage Controllers are qualified for SCSI drives only. They do not support the ATA Drives.	

	Compaq RAID LC2 Controller	188044-B21
	Compaq RAID LC2 Controller (Japan)	188044-291
	Smart Array 431 Controller	127695-B21
	Smart Array 431 Controller (Japan)	127695-291
	Smart Array 532 Controller	225338-B21
	Smart Array 532 Controller (Japan)	225338-291
	64-bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter	154457-B21
	64-bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter (Japan)	154457-291
	64-bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter	129803-B21
	64-bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter (Japan)	129803-291
Wireless HAP Solution	Compaq WL410 Wireless SMB Access Point (US)	191811-001
	Compaq WL410 Wireless SMB Access Point (Australia)	191811-011
	Compaq WL410 Wireless SMB Access Point (Europe)	191811-021
	Compaq WL410 Wireless SMB Access Point (UK)	191811-031
	Compaq WL410 Wireless SMB Access Point (Japan)	191811-291
	Compaq WL410 Wireless SMB Access Point (China)	191811-AA1
	Compaq WL410 Wireless SMB Access Point (Korea)	191811-AD1
	Compaq WL410 Wireless SMB Access Point (S. Africa)	191811-AR1
	Compaq WL510 Wireless Enterprise Access Point (US)	216709-001
	Compaq WL510 Wireless Enterprise Access Point (Australia)	216709-011
	Compaq WL510 Wireless Enterprise Access Point (Europe)	216709-021
	Compaq WL510 Wireless Enterprise Access Point (UK)	216709-031
	Compaq WL510 Wireless Enterprise Access Point (Italy)	216709-061
	Compaq WL510 Wireless Enterprise Access Point (Denmark)	216709-081
	Compaq WL510 Wireless Enterprise Access Point (Switzerland)	216709-111
	Compaq WL510 Wireless Enterprise Access Point (Japan)	216709-291
	Compaq WL510 Wireless Enterprise Access Point (China)	216709-AA1

	Compaq WL510 Wireless Enterprise Access Point (Korea)	216709-AD1
	Compaq WL510 Wireless Enterprise Access Point (S. Africa)	216709-AR1
Communications	Compaq NC3123 Fast Ethernet NIC PCI 10/100 WOL	174830-B21
	Compaq NC3134 Fast Ethernet NIC 64 PCI Dual Port 10/100	138603-B21
	Compaq NC3135 Fast Ethernet Module Dual 10/100 Upgrade Module for NC3134 and NC3131	138604-B21
	Compaq NC6132 1000 SX Upgrade Module	338456-B23
	Compaq NC3133 Fast Ethernet Module 100 FX Upgrade Module for NC3134 and NC3131	338456-B25
	Compaq NC6136 Gigabit Server Adapter, 64-bit/66MHz, PCI, 1000 SX	203539-B21
	Compaq NC7131 Gigabit Server Adapter, 64-bit/66MHz, PCI, 10/100/1000-T	158575-B21
	56K v.90 PCI Modem (NA only)	171914-001
Management Options	Compaq Remote Insight Lights-Out Edition (NA, LA)	157866-001
	Compaq Remote Insight Lights-Out Edition (EURO)	157866-021
	Compaq Remote Insight Lights-Out Edition (ADP, Japan)	157866-371
Monitors	Flat Panel TFT8030 Color Monitor Two-Tone	234362-xxx
	TFT8020 18 Flat Panel Monitor (opal, bulked packed 2 monitor heads per box)	173610-xxx
	Flat Panel TFT7020 Color Monitor Two-Tone	253216-xxx
	Flat Panel TFT5030 Color Monitor Two-Tone (Carbon/Silver)	228134-xxx
	Flat Panel TFT5015 Color Monitor (Opal)	234043-xxx
	Flat Panel TFT5015 Color Monitor Two-Tone (Carbon/Silver)	234044-xxx
	P1220 CRT Monitor Two-Tone (Carbon/Silver)	244374-xxx
	P920 CRT Monitor Two-Tone (Carbon/Silver)	244375-xxx
	P720 CRT Monitor Two-Tone (Carbon/Silver)	244373-xxx
	V720 CRT Monitor Two-Tone (Carbon/Silver)	232944-xxx
	V720 CRT Monitor (Opal)	232943-xxx
	V570 Color Monitor Two-Tone (Carbon/Silver)	228113-xxx
	V570 Color Monitor	228114-xxx
	S920 Color Monitor (Opal)	240325-xxx

S920 Color Monitor Two-Tone (Carbon/Silver)	240326-xxx
S720 Color Monitor (Opal) (Lite-On) Note: Available in North America, Canada, and Greater China only.	239286-xxx
S720 Color Monitor Two-tone (Carbon/Silver) (Lite-On) Note: Available in North America, Canada, and Greater China only.	239287-xxx
S720 Color Monitor (Opal) (Samsung) Note: Available in APD, Latin America, EMEA, and Japan only.	238992-xxx
S720 Color Monitor Two-tone (Carbon/Silver) (Samsung) Note: Available in APD, Latin America, EMEA, and Japan only.	238993-xxx

CRT Country Code Key

NORTH AMERICA (NA)/LATIN AMERICA (LA)

Dash #	Description
-001	NA Kit with US Power Cord
-002	Carbon model with US Power Cord
-003	Touch Screen model with US Power Cord
-004	NAFTA model with US Power Cord (Made in Mexico)
-005	NA Kit with Powered Speakers
-006	GSA model with US Power Cord
-007	NH MPR model with US power cord (Made in Mexico)
-B24	TCO model without power cord (Digital Classic)
-201	EH model for Brazil (older Brazil models used -B29)
-202	EH model for Brazil Carbon (older Brazil models used -B29)
-C91	EH model for Mercosur countries
-C92	EH model for Mercosur countries Carbon
-B29	EH/ALADI model for Latin America

Note: All NA/LA models above are NH.

EUROPE, MIDDLE EAST AND AFRICA (EMEA)

Dash #	Description
-021	NH/TCO with Eurocord (DCE Hub)
-022	NH/MPR with Eurocord (DCE Hub) (India)
-023	NH Carbon model with Eurocord (DCE Hub)
-024	NH Touch Screen model with Eurocord (DCE Hub)
-025	NH Kit with Speakers and Eurocord
-A91	NH/TCO without power cord (Dubai hub)
-A92	NH/MPR without power cord (Dubai hub)
-031	NH/TCO with UK Cord (UK Hub)
-032	NH/MPR with UK Cord (UK Hub)
-033	NH/TCO carbon with UK Cord
-035	NH Kit with Speakers and UK Cord

-B21	SH/MPR without power cord (S. Africa Hub)
-B23	SH/TCO without power cord (S. Africa Hub)
-B27	SH/TCO Carbon without power cord (S. Africa Hub)

PACIFIC/AUSTRALIA (APD)

Dash #	Description
-B22	NH/MPR without power cord
-B24	NH/TCO without power cord
-B25	EH Carbon model without power cord
-B26	NH Touch Screen model without power cord
-011	SH model with AUZ/NZ power cord
-015	SH model with speakers AUZ/NZ power cord
-012	SH Carbon model with AUZ/NZ power cord
-AD1	NH model for Korea
-AD2	NH Carbon model for Korea
-B28	EH model without power cord
-B35	EH model with speakers no power cord (Singapore)

GREATER CHINA (GCD)

Dash #	Description
-AA1	NH/China Kit with CCIB label (Local Sales)
-AA2	NH/ Carbon China Kit with CCIB label (Local Sales)
-KA1	NH/China Kit with CCIB label (External Sales/Bundles in HK)
-AB1	NH/Taiwan kit, mfg. in Taiwan

JAPAN (CKK)

Dash #	Description
-291	NH/Japan Kit with 3-2 pin adapter
-292	NH Carbon Japan Kit with 3-2 pin adapter

TFT Country Code Key

EUROPE, MIDDLE EAST & AFRICA (EMEA)

Dash #	Description
-021	Europe
-031	UK

NORTH AMERICA

Dash #	Description
-001	NA
-B24	All NA/LA models

APD

Dash #	Description
-011	Australia/NZ

JAPAN (CKK)

Dash #	Description
-291	Japan

Tape Drives

Note: In order to install certain tape drives internally, you may need to remove the rails that come standard on the drives and then re-insert the screws in the mounting holes.
Note: A SCSI controller needs to be purchased to operate internal SCSI devices in the ML330e.
Note: To run any external SCSI-based devices, the customer needs to purchase a SCSI controller (both the ML330e & ML330).

Internal AIT IDE Tape Drives

Compaq Internal AIT 35-GB, IDE Tape Drive (Carbon)	246627-B22

Note: Please see the Compaq AIT 35GB IDE Tape Drive QuickSpecs for additional options such as cassettes and for an up-to-date listing of the latest O/S Support details, please see the following:
http://www5.compaq.com/products/quickspecs/11013_div/11013_div.HTML (Division/World Wide)
http://www5.compaq.com/products/quickspecs/11013_na/11013 _na.HTML (North America)

Internal and External DAT Tape Drives

Internal 12/24-GB DAT Drive (opal)	295513-B22
Internal 12/24-GB DAT Drive (opal) (Japan)	295513-292

Note: Please see the Compaq 12/24 GB DAT Drive QuickSpecs for additional options such as cassettes and for an up-to-date listing of the latest O/S Support details, please see the following:
http://www5.compaq.com/products/quickspecs/10239_div/10239_div.HTML (Division/World Wide)
http://www5.compaq.com/products/quickspecs/10239_na/10239_na.HTML (North America)

Internal 20/40-GB DAT DDS-4 Tape Drive	157769-B21
External 20/40-GB DAT DDS-4 Tape Drive	157770-001
External 20/40-GB DAT DDS-4 Tape Drive (Int'l)	157770-B31
External 20/40-GB DAT DDS-4 Tape Drive (Japan)	157770-291

Note: Please see the Compaq 20/40-GB DAT Tape Drive QuickSpecs for additional options such as host bus adapters, controllers, cassettes, and for an up-to-date listing of the latest O/S Support details, please see the following:
http://www5.compaq.com/products/quickspecs/10426_div/10426_div.HTML (Division/World Wide)
http://www5.compaq.com/products/quickspecs/10426_na/10426_na.HTML (North America)

External Storage - Tower	Note: To run any external SCSI-based devices, the customer needs to purchase a SCSI controller (both the ML330e & ML330).	
	StorageWorks Enclosure Model 4314T (tower)	190210-001
	StorageWorks Enclosure Model 4314T (tower) (Int'l)	190210-B31
	StorageWorks Enclosure Model 4314T (tower) (Japan)	190210-291
	Note: The Compaq StorageWorks Enclosure 4300 Family support the Wide Ultra2/Ultra3 1" Hot Plug Hard Drives.	
	StorageWorks Enclosure 4200 Redundant Power Supply Option	119826-B21
	StorageWorks Enclosure 4200 Ultra3 Single Bus I/O Module Option	190212-B21
	StorageWorks Enclosure 4200 Ultra3 Dual Bus I/O Module Option	190213-B21
Uninterruptible Power Supply	Compaq Pro UPS 500 (300 Watt) 120V (NA)	136386-001
	Compaq Pro UPS 500 (300 Watt) 120V (Int'l)	136386-B31
	Compaq Pro UPS 500 (300 Watt) 120V (Japan)	136386-291
	UPS Model T700 (700VA, 500 Watt), Low Voltage (NA)	204015-001
	UPS Model T700 (700VA, 500 Watt), High Voltage (Int'l)	204015-B31
	UPS Model T700 (700VA, 500 Watt), Low Voltage (Japan)	204015-291
	Compaq UPS T1000 XR (NA)	204155-001
	Compaq UPS T1000 XR (Int'l)	204155-B31
	Compaq UPS T1500 XR (NA)	204155-002
	Compaq UPS T1500 XR (Int'l)	204155-B32
	Compaq UPS T1500 XR (Japan)	204155-292
	Extended Runtime Module T1000 XR Note: Available for the UPS T1000 XR Models only.	218967-B21
	Extended Runtime Module T1500 XR/T2200 XR Note: Available for the UPS T1500 XR or T2200 XR Models only.	218969-B21
	High to Low Voltage Transformer (250VA)	388643-B21
	SNMP-EN Adapter (Not available for UPS T700 or UPS 500)	347225-B21
	Multi-Server UPS Card (Not available for UPS T700 or UPS 500)	123508-B21
	Scalable UPS Card (Not available for UPS T700 or UPS 500)	123509-B21
Other	Enhanced Keyboard	296433-006
	Mouse	141549-006
Service and Support Offerings (*CarePaq*™ Services)	***Hardware Services 4-Hour On-site Service***	
	5 x 9 Coverage, 3 Years (2-5-2 Part Number for U.S.)	FM-EL4HR-36
	5 x 9 Coverage, 3 Years (2-5-2 Part Number for Canada)	FP-EL4HR-36
	5 x 9 Coverage, 3 Years (6-3 Part Number for U.S.)	162676-002
	5 x 9 Coverage, 3 Years (6-3 Part Number for Canada)	162676-122

5 x 9 Coverage, 3 Years (6-3 Part Number for EMEA)	324416-022
7 x 24 Coverage, 3 Years (2-5-2 Part Number for U.S.)	FM-EL724-36
7 x 24 Coverage, 3 Years (2-5-2 Part Number for Canada)	FP-EL724-36
7 x 24 Coverage, 3 Years (6-3 Part Number for U.S.)	162675-002
7 x 24 Coverage, 3 Years (6-3 Part Number for Canada)	162675-122
7 x 24 Coverage, 3 Years (6-3 Part Number for EMEA)	376910-022
ML330e Hardware Services Next Business Day On-Site Service	
5 x 9 Next Business Day Coverage, 3 Years (2-5-2 Part Number for U.S.)	FM-ELXHW-36
5 x 9 Next Business Day Coverage, 3 Years (6-3 Part Number for U.S.)	102407-002
5 x 9 Next Business Day Coverage, 3 Years (6-3 Part Number for EMEA)	206947-022
Installation & Start-up Services	
Hardware Installation (2-5-2 Part Number for US)	FM-ELINS-IN
Hardware Installation (2-5-2 Part Number for Canada)	FP-ELINS-IN
Hardware Installation (6-3 Part Number for US)	401791-002
Hardware Installation (6-3 Part Number for Canada)	401791-122
Hardware Installation (6-3 Part Number for EMEA)	Quote
O/S & Hardware Installation (EMEA) (Hardware installation plus two days O/S start-up activity (install, configure, network access & orientation.)	Quote
Server Installation and Set-Up (Installation of the server, installation of the appropriate service tools, check to ensure device SW and firmware is loaded and installation of the operating system software (6-3 Part Number for EMEA)	204563-022
Pre-installation planning; unpack equipment, install most current Compaq HW options internal to server at same time of server installation; assemble & test; basic user information provided; Install & configure basic functionality of Win NT Operating System plus up to 2 days start-up activity, configure print & network access services, and orientation (2-5-2 Part Number for U.S.)	FP-MSTAR-01
Pre-installation planning; unpack equipment, install most current Compaq HW options internal to server at same time of server installation; assemble & test; basic user information provided; Install & configure basic functionality of Win NT Operating System plus up to 2 days start-up activity, configure print & network access services, and orientation (6-3 Part Number for U.S.)	240013-002
Pre-installation planning; unpack equipment, install most current Compaq HW options internal to server at same time of server installation; assemble & test; basic user information provided; Install & configure basic functionality of Novell NetWare Operating System plus up to 2 days start-up activity, configure print & network access services, and orientation (2-5-2 Part Number for U.S.)	FP-NSTAR-01
Pre-installation planning; unpack equipment, install most current Compaq HW options internal to server at same time of server installation; assemble & test; basic user information provided; Install & configure basic functionality of Novell NetWare Operating System plus up to 2 days	240008-002

start-up activity, configure print & network access services, and orientation (6-3 Part Number for U.S.)	
CarePaq Priority Services for ProLiant Servers – Priority Level	
9 x 5 HW, 4-hr response, Next Available HW engineer; 9 x 5 Bronze Software Support 2-hr response for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Next Available Specialist (2-5-2 Part Number for U.S.)	FP-M01C1-36
9 x 5 HW, 4-hr response, Next Available HW engineer; 9 x 5 Bronze Software Support 2-hr response for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Next Available Specialist (6-3 Part Number for U.S.)	239928-002
9 x 5 HW, 4-hr response, Next Available HW engineer; 9 x 5 Bronze Software Support 2-hr response for Novell NetWare Operating System, Next Available Specialist (2-5-2 Part Number for U.S.)	FP-N01C1-36
9 x 5 HW, 4-hr response, Next Available HW engineer; 9 x 5 Bronze Software Support 2-hr response for Novell NetWare Operating System, Next Available Specialist (6-3 Part Number for U.S.)	239968-002
5 x 9 4-hour H/W, 5 x 9 2-hour O/S (NT & NetWare), Three Years (2-5-2 Part Number for Canada)	FP-CZ101-36
5 x 9 4-hour H/W, 5 x 9 2-hour O/S (NT & NetWare), Three Years (6-3 Part Number for Canada)	155323-122
5 x 9 4-hour H/W, 5 x 9 2-hour O/S (NT & NetWare), Three Years (6-3 Part Number for EMEA)	179834-022
CarePaq Priority Services for ProLiant Servers – Priority 24 Level	
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Bronze Software Support, 2-hr response for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Next Available Specialist (2-5-2 Part Number for U.S.)	FP-M02C1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Bronze Software Support, 2-hr response for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Next Available Specialist (6-3 Part Number for U.S.)	239930-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Bronze Software Support, 2-hr response for Novell NetWare Operating System, Next Available Specialist (2-5-2 Part Number for U.S.)	FP-N02C1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Bronze Software Support, 2-hr response for Novell NetWare Operating System, Next Available Specialist (6-3 Part Number for U.S.)	239970-002
7 x 24 4-hour H/W, 7 x 24 2-hour O/S (NT & NetWare), Three years (6-3 Part Number for EMEA)	179839-022
CarePaq Priority Services for ProLiant Servers – Priority Plus Level	
7 x 24 4-hour H/W, 7 x 24 1-hour O/S (NT & NetWare), SPS account review, Three Years (2-5-2 Part Number for Canada)	FP-CZ301-36

7 x 24 4-hour H/W, 7 x 24 1-hour O/S (NT & NetWare), SPS account review, Three Years (6-3 Part Number for Canada)	155331-122
CarePaq Priority Services for ProLiant Servers – Priority Silver	
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Software Support, 1-hr response, Monday – Friday, 8AM – 5PM local time, 2-hr response after hours for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Technical Account Manager, Technical Newsletter, SW activity review, proactive patch notification, 1 System Healthcheck per year (2-5-2 Part Number for U.S.)	FP-M04C1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Software Support, 1-hr response, Monday – Friday, 8AM – 5PM local time, 2-hr response after hours for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Technical Account Manager, Technical Newsletter, SW activity review, proactive patch notification, 1 System Healthcheck per year (6-3 Part Number for U.S.)	239932-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System (2-5-2 Part Number for U.S.)	FP-M24C1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System (6-3 Part Number for U.S.)	239934-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Software Support, 1-hr response, Monday – Friday, 8AM – 5PM local time, 2-hr response after hours for Novell NetWare Operating System, Technical Account Manager, Technical Newsletter, SW activity review (2-5-2 Part Number for U.S.)	FP-N04C1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Software Support, 1-hr response, Monday – Friday, 8AM – 5PM local time, 2-hr response after hours for Novell NetWare Operating System, Technical Account Manager, Technical Newsletter, SW activity review (6-3 Part Number for U.S.)	239972-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Novell NetWare Operating System (2-5-2 Part Number for U.S.)	FP-N24C1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Novell NetWare Operating System (6-3 Part Number for U.S.)	239974-002
CarePaq Priority Services for ProLiant Servers – Priority Premier Level	
7 x 24 2-hour H/W, 7 x 24 1-hour O/S (NT & NetWare), SPS Account Review, Proactive Management Review, named S/w rep, Three Years (2-5-2 Part Number for Canada)	FP-CZ501-36
7 x 24 2-hour H/W, 7 x 24 1-hour O/S (NT & NetWare), SPS Account Review, Proactive Management Review, named S/w rep, Three Years (6-3 Part Number for Canada)	155335-122

CarePaq Priority Services for ProLiant Servers – Priority Executive Premier Level	
7 x 24 2-hour H/W, 7 x 24 30-minute O/S (NT & NetWare), SPS Account Review, Proactive Management Review, named S/w rep, Three Years (2-5-2 Part Number for Canada)	FP-CZ701-36
7 x 24 2-hour H/W, 7 x 24 30-minute O/S (NT & NetWare), SPS Account Review, Proactive Management Review, named S/w rep, Three Years (6-3 Part Number for Canada)	155339-122

Note: For more information, customer/resellers can contact http://www.Compaq.com/services.
Note: This Web site is available in English only.

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Memory

Compaq ProLiant ML330 1.0 GHz Models

Standard Memory
128-MB PC133-MHz Registered ECC SDRAM DIMM installed (1 x 128-MB SDRAM DIMM)

Standard Memory Plus Optional Memory
Up to 1664-MB memory is available with the optional installation of PC133-MHz Registered ECC SDRAM DIMM memory kits.

Standard Memory Replaced with Optional Memory
Up to 2048-MB of memory is available with the removal of the standard 128-MB of memory and the optional installation of PC133-MHz Registered ECC SDRAM DIMM memory kits.

Note: Charts do not represent all possible memory configurations.

Memory		Slot			
		1	2	3	4
Standard	**128 MB**	**128 MB**	**Empty**	**Empty**	**Empty**
Optional	**1664 MB**	**128 MB**	**512 MB**	**512 MB**	**512 MB**
Maximum	**2048 MB**	**512 MB**	**512 MB**	**512 MB**	**512 MB**

Following are memory options available from Compaq:

- 512-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit 128279-B21
- 256-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit 128278-B21
- 128-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit 128277-B21
- 64-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit 128276-B21

Compaq ProLiant ML330e 1.0 GHz Models

Standard Memory
64-MB PC133-MHz Registered ECC SDRAM DIMM installed (1 x 64-MB SDRAM DIMM)

Standard Memory Plus Optional Memory
Up to 1600-MB memory is available with the optional installation of PC133-MHz Registered ECC SDRAM DIMM memory kits.

Standard Memory Replaced with Optional Memory
Up to 2048-MB of memory is available with the removal of the standard 64-MB of memory and the optional installation of PC133-MHz Registered ECC SDRAM DIMM memory kits

Note: Charts do not represent all possible memory configurations.

Memory		Slot			
		1	2	3	4
Standard	64 MB	64 MB	Empty	Empty	Empty
Optional	1600 MB	64 MB	512 MB	512 MB	512 MB
Maximum	2048 MB	512 MB	512 MB	512 MB	512 MB

Following are memory options available from Compaq:

- 512-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit 128279-B21
- 256-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit 128278-B21
- 128-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit 128277-B21
- 64-MB PC133-MHz Registered ECC SDRAM DIMM Memory Option Kit 128276-B21

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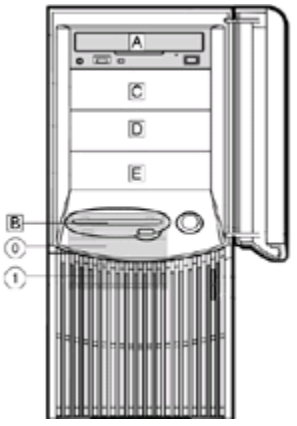
Overview Standard Features Models Options Memory Storage TechSpecs

Storage



A	32x or 40x IDE CD-ROM
B	1.44-MB Diskette Drive
C, D, E	Removable Media Bays (1.6 each)
0, 1	Two 1 Non-Hot Plug Drive Bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Up to 1	B	Integrated
IDE CD-ROM Drive	Up to 2	A or C	Integrated IDE
DVD-ROM Drive Option Kit	Up to 2	A or C	Integrated IDE

Hard Drives (ML330 Models only)

Wide Ultra3 SCSI – Non-Hot Plug

1-inch 36.4-GB 10,000 rpm 18.2-GB 10,000 rpm	Up to 5	C, D, E + 0, 1	Integrated Single Channel Wide Ultra2 SCSI Adapter (ML330 Models) Compaq RAID LC2 Controller Smart Array 431 Controller Smart Array 532 Controller 64-bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter 64-bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter

Hard Drives (ML330e Models only)

ATA/100 IDE – Non-Hot Plug

1-inch 40.0-GB 20.0-GB	Up to 4	D, E + 0, 1	Integrated Dual Channel Ultra ATA 100 Controller (ML330e Models)

External Storage

StorageWorks Enclosure 4300 Family (supports Ultra2/Ultra3 1 drives only)	Up to 7	External	Smart Array 431 Controller Smart Array 532 Controller Smart Array 3200 Controller 64-Bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter

Maximum Storage Capacity - ML330e Models (SCSI Attached (*StorageWorks* Enclosure)

Internal	160.0 GB (4 x 40.0 GB) (ATA only)
External	3.567 TB (14 x 36.4 GB) x 7 (Requires additional SCSI controllers in slots)
Total	3.727 TB

Maximum Storage Capacity - ML330 Models (SCSI Attached (*StorageWorks* Enclosure)

Internal	218.4 GB (5 x 36.4 GB + 1 x 36.4 GB hard drives – in CD-ROM bay)
External	3.567 TB (14 x 36.4 GB) x 7
Total	3.785 TB

	Quantity Supported	**Position Supported**	**Controller**

Tape Drives

Note: A SCSI controller needs to be purchased to operate internal SCSI devices in the ML330e.
Note: To run any external SCSI-based devices, the customer needs to purchase a SCSI controller (both the ML330e & ML330).
Note: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:
http://www5.compaq.com/products/quickspecs/North_America/10233.html (North America)
http://www5.compaq.com/products/quickspecs/Division/10233.html (Division/World Wide)

Internal AIT 35GB IDE Tape Drive	Up to 3	C,D	Integrated IDE (ML330 Models)

Internal 12/24-GB DAT Drive	Up to 3	C,D	Integrated Single Channel Wide Ultra2 SCSI Adapter (ML330 Models) 64-bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter 64-bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter
20/40-GB DDS-4 Tape Drive	Up to 3	C,D	Integrated Single Channel Wide Ultra2 SCSI Adapter (ML330 Models) 64-bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter 64-bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter

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Overview Standard Features Models Options Memory Storage TechSpecs

TechSpecs

System Unit	**Dimensions** (HxWxD) (with feet)	16.5 x 7.5 x 20.25 in/41.91 x 19.05 x 51.44 cm	
	Weight (approximate)	34 lb/15.42 kg	
	Input Requirements (per power supply)	Range Line Voltage	90 to 132 VAC/180 to 264 VAC
		Normal Line Voltage	115 to 230 VAC
	Line Frequency	47 to 60 Hz	
	Rated Input Current	< 8A RMS at 90VAC with maximum load	
	BTU Rating	1,560 BTU	
	SCSI Connectors (ML330 Models only)	One internal 68-pin Wide SCSI Connector Note: Support for either one internal or one external. External is achieved using an internal to external SCSI Cable Option Kit and the SCSI knockout.	
	Power Supply Output Power	Rated Steady-State Power	200W
		Maximum Peak Power	250W
	Temperature Range	Operating	50° to 93° F/10° to 35° C
		Shipping	-40° to 150° F/-40° to 66° C
	Relative Humidity (non-condensing)	Operating	20% to 80%
		Non-operating	5% to 90%
	Acoustic Noise	Idle (Fixed Disk Drives Spinning)	
		L_{WAd} (BELS)	5.3
		L_{pAm} (dBA)	45
		Operating (Random Seeks to Fixed Disks)	
		L_{WAd} (BELS)	5.3
		L_{pAm} (dBA)	45

1.44-MB Diskette Drive	**Diskette Size**	3.5 in	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per Diskette (high/low density)	1.44 MB/720 KB	
	Drive Supported	One	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500/250 Kb/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	169/94 ms
		Settling Time	15 ms
		Latency Average	100 ms
	Cylinders (high/low)	80/80	
	Read/Write Heads	Two	

Non-Hot Plug Wide Ultra3 SCSI Hard Drives	**36.4 GB 10K** 176497-B21	**Capacity**	36419.5 MB	
		Height	1 in/25.4 mm	
		Width	4.0 in/101.6 mm	
		Interface	Wide Ultra3 SCSI	
		Transfer Rate Synchronous (Maximum)	160 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.9 ms
			Average	5.7 ms
			Full-Stroke	13 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	71,132,000
		Operating Temperature	50° to 95° F/10° to 35° C	
	18.2 GB 10K 142674-B21	**Capacity**	18209.3 MB	
		Height	1 in/25.4 mm	
		Width	4.0 in/101.6 mm	
		Interface	Wide Ultra3 SCSI	
		Transfer Rate Synchronous (Maximum)	160 MB/s	

		Seek Time (typical reads, including settling)	Single Track	0.9 ms
			Average	5.5 ms
			Full-Stroke	12 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	35,565,080
		Operating Temperature	50° to 95° F/10° to 35° C	
Non-Hot Plug ATA/100 Hard Drives	**40 GB 7.2K** 230534-B21	**Capacity**	40020 MB (phys.) 40800 MB (log)	
		Height	1 in/25.4 mm	
		Width	4 in/101.6 mm	
		Interface	Ultra ATA/100	
		Transfer Rate Synchronous (Maximum)	100 MB/s	
		Seek Time (typical reads, including settling)	Single Track	1.2 ms
			Average	8.55 ms
			Full-Stroke	20 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	78,165,360
		Operating Temperature	50° to 95° F/10° to 35° C	
	20 GB 7.2K 231377-B21	**Capacity**	20020 MB (phys.) 20400 MB (log)	
		Height	1 in/25.4 mm	
		Width	4 in/101.6 mm	
		Interface	Ultra ATA/100	
		Transfer Rate Synchronous (Maximum)	100 MB/s	
		Seek Time (typical reads, including settling)	Single Track	1.2 ms
			Average	8.55 ms
			Full-Stroke	20 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	39,102,336
		Operating Temperature	50° to 95° F/10° to 35° C	
40X Max IDE CD-ROM Drive	**Disk**	Applicable Disk	CD-ROM, CD-XA, CD-DA (Mode 1, Mode 2, Form 1 and 2)	
			Photo CD (Single and Multi-session)	
			Mixed Mode (Audio and Data combined)	
			CD-R	

		Capacity	540 MB (Mode 1, 12 cm) 650 MB (Mode 2, 12 cm)
	Block Size	Mode 1	2,048 bytes
		Mode 2	2,340 bytes, 2,336 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
	Interface	IDE (ATAPI)	
	Access Times (typical)	Random	100 ms
		Full-Stroke	150 ms
	Audio Output Level	Line-Out	0.7 VRMS at 47 kOhms
	Data Transfer Rate	Sustained	150 KB/s (1X audio)
		Burst	16.67 Mbytes/sec
	Cache Buffer	128 KB	
	Start-up Time (typical)	< 7 seconds	
	Stop Time	< 4 seconds	
	Laser Parameters	Type	Semiconductor Laser GaA1As
		Wave Length	780 ± 25 nm
	Operating Conditions	Temperature	41° to 113° F/5° to 45° C
		Humidity	10% to 80%
	Dimensions	(HxWxD, maximum)	1.7 x 5.85 x 8.11 in/ 4.29 x 15 x 20.8 cm
		Weight	2.09 lb/0.95 kg
32X Max IDE CD-ROM Drive	**Disk**	Applicable Disk	CD-ROM (Mode 1 and 2), CD-DA, CD-XA (Mode 2, Form 1 and 2), CD-I ready, Photo CD (Single and Multi-session), Mixed Mode (Audio and Data combined), CD-WO
		Capacity	650 MB
		Diameter	4.7 in, 3.15 in/12 cm, 8 cm
		Rotational Speed	5,200 rpm
		Diameter	4.7 in, 3.15 in/12 cm, 8 cm
		Center Hole	0.6 in/15 mm diameter
		Thickness	1.2 mm
		Track Pitch	1.6 µm
	Block Size	Mode 1	2,048, 1,024 bytes
		Mode 2	2,340, 2,336, 1,024 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
	Interface	IDE (ATAPI)	

Access Times (typical)	Random	< 100 ms
	Full-Stroke	< 150 ms
Audio Output Level	Line-Out	0.7 VRMS at 47 kOhms
	Headphone	0.6 VRMS at 32 Ohms (maximum volume)
Data Transfer Rate	Sustained	150 KB/s (single)
	Burst	150 to 4800 KB/s
Cache Buffer	128 KB	
Start-up Time (typical)	< 7 seconds	
Stop Time	< 4 seconds	
Laser Parameters	Type	Semiconductor Laser GaA1As
	Wave Length	780 ± 25 nm
	Divergence Angle	53.5° ± 1.5°
	Output Power	0.14mW
Operating Conditions	Temperature	41° to 113° F/5° to 45° C
	Humidity	10% to 80%
Dimensions	(HxWxD, maximum)	1.69 x 5.91 x 8.2 in/ 4.29 x 15 x 20.8 cm
	Weight	2.09 lb/0.95 kg

Integrated Dual Channel Ultra ATA/100 Controller (ML330e Models only)

Drives Supported	Up to 4 IDE devices (2 devices/channel)
Channels	2 (primary and secondary)
Storage Capacity	160 GB
Data Transfer Method	32-bit/33-MHz PCI bus-master
Maximum ATA Channel Transfer Rate	100 MB/s per channel
Maximum Transfer Rate per PCI Bus (peak)	133 MB/s per channel
ATA Protocols	UDMA Mode[0-5]
	PIO Mode[0-4]
ATA 100 Cable	80-Conductor Cable
Internal ATA Connectors	Two 40-Pin Connectors (primary and secondary)

Integrated Single Channel Wide Ultra2 SCSI Adapter (ML330 Models only)

Drives Supported	Up to 14 SCSI devices
Data Transfer Method	64-bit PCI bus-master
SCSI Channel Transfer Rate	80 MB/s per channel
Maximum Transfer Rate per PCI Bus (peak)	133 MB/s per channel
SCSI Protocols	Wide Ultra2 SCSI
	Fast SCSI-2
Electrical Protocol	Low Voltage Differential (LVD)
SCSI Termination	Active Termination
External SCSI Connectors	Two 80-Pin VHDCI connectors

	Internal SCSI Connectors	Two 68-Pin Wide Ultra SCSI-3 connectors
Compaq RAID LC2 Controller	**Protocol**	Wide Ultra2 SCSI
	SCSI Electrical Interface	Low Voltage Differential (LVD)
	Drives Supported	Wide Ultra3 and Wide Ultra2 SCSI hard drives (Ultra3 drives will operate at 80 MB/s max transfer rate)
	SCSI Port Connectors	Single Internal SCSI port
	Data Transfer Method	32-Bit PCI bus-master
	Maximum Transfer Rate on System Bus (peak)	133 MB/s
	Simultaneous Drive Transfer Channels	One
	Channel Transfer Rate	80 MB/s per channel
	Software Upgradeable Firmware	Yes
	Cache Memory	8 MB Read Cache
	Logical Drives Supported	32
	RAID Support	0, 1, 1+0, 5
	Note: A minimum of three drives is required for RAID 5.	
64-bit/66-MHz Single Channel Wide Ultra3 SCSI Adapter	**Drives Supported**	Up to 14 SCSI devices
	Storage Capacity	254.8 GB
	Data Transfer Method	64-bit/66-MHz PCI bus-master
	Maximum SCSI Channel Transfer Rate	160 MB/s per channel
	Maximum Transfer Rate per PCI Bus (peak)	532 MB/s per channel
	SCSI Protocols	Wide Ultra3 SCSI
		Wide Ultra2 SCSI
		Wide-Ultra SCSI-3
		Fast-Wide SCSI-2
		Fast SCSI-2
	Electrical Protocol	Low Voltage Differential (LVD)
	SCSI Termination	Active Termination
	External SCSI Connectors	One 68-Pin Wide Ultra SCSI-3 connector
	Internal SCSI Connectors	Two 68-Pin Wide Ultra SCSI-3 connectors (one LVD and one SE)
		One 50-Pin Narrow Ultra connector
Smart Array 532 Controller	**Data Compatible with all Smart Array Controllers**	Yes
	Instant Upgrades to other Smart Array Controllers	Yes
	Consistent Software Manageability Tools	Yes

	PCI Bus	64-bit, 66MHz
	PCI Peak Data Transfer Rate	533 MB/s
	SCSI Protocols Supported	Ultra3, Ultra2
	SCSI Peak Data Transfer Rate	160 MB/s
	Channels	2
	SCSI Ports (external/internal)	1/1
	Drives Supported (maximum)	14
	Note: Drives Supported (maximum) is based on use of *StorageWorks* Enclosure 4300 family (14 hard disk drive enclosure).	
	Cache	32-MB cache engine
	RAID Support	0, 1, 1+0, 5
	Logical Drives (maximum)	32
	Online Configuration	Yes
	Online Capacity Expansion	Yes
	Logical Drive Capacity Extension	Yes
	Online Stripe Size Migration	Yes
	Online RAID Level Migration	Yes
	Online Spare Support	Yes
	Automatic Data Recovery	Yes
	Drive Roaming	Yes
	Redundant Controllers	No
Smart Array 431 Controller	**Data Compatible with all Smart Array Controllers**	Yes
	Instant Upgrades to other Smart Array Controllers	Yes
	Consistent Software Manageability Tools	Yes
	PCI Bus	64-bit, 33MHz
	PCI Peak Data Transfer Rate	266 MB/s
	SCSI Protocols Supported	Ultra3, Ultra2, Wide-Ultra
	SCSI Peak Data Transfer Rate	160 MB/s
	Channels	1
	SCSI Ports (external/internal)	1/1
	Drives Supported (maximum)	14
	Note: Drives Supported (maximum) is based on use of *StorageWorks* Enclosure 4200 family (14 hard disk drive enclosure).	
	Cache	16-MB cache engine
	RAID Support	0, 1, 1+0, 5
	Logical Drives (maximum)	32
	Online Configuration	Yes
	Online Capacity Expansion	Yes
	Logical Drive Capacity Extension	Yes
	Online Stripe Size Migration	Yes
	Online RAID Level Migration	Yes
	Online Spare Support	Yes

	Automatic Data Recovery	Yes
	Drive Roaming	Yes
	Redundant Controllers	No
Video Controller	**Controller Chip**	ATI RAGE XL
	Video DRAM	4 MB Video SDRAM
	Data Transfer Method	32-bit PCI
	Support Resolution	Supported Color Depths:
	640 x 480	16.7M, 64K, 256, 16
	800 x 600	16.7M, 64K, 256, 16
	1024 x 768	16.7M, 64K, 256, 16
	1152 x 864	16.7M, 64K, 256, 16
	Connector	VGA

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